

wider impact of the pandemic could have longer-term consequences for South Korea's demographic future.

One of the more successful countries in managing the pandemic, South Korea limited the economic damage with a mixture of social distancing measures, robust economic stimulus, and a strong export sector. As a result, South Korea's GDP only declined 1 percent. China was the only major economy to perform better.

However, despite South Korea's overall success in handling the pandemic, the virus has created additional uncertainty about the economy domestically and internationally, as well as in the form of increased unemployment. This increase in economic uncertainty from the pandemic will likely be a factor in decisions on childbirth and thus impact South Korea's demographic future.

How Economic Crises Can Impact Fertility Rates

A number of considerations can influence a woman's decision on how many children to have. These include factors such as education level and a desire for smaller families, but also economic factors. As Melissa S. Kearney and Phillip Levine note in their work on COVID-19's impact on childbirth in the United States, increases in income tend to lead couples to choose to have more children, while disruptions in income result in decisions to delay childbirth or to have fewer children.

In the case of COVID-19, the question is whether the economic disruptions will delay childbirths or result in a permanent decline in the number of children South Koreans choose to have. During the Great Depression, for example, birth rates declined significantly in the United States, but bounced back as the economy began to improve.

A study by the Bank of Korea, however, suggests that the impacts could be longer term as economic uncertainty discourages young Koreans from having children. Prior to the pandemic, South Koreans were already increasingly reluctant to marry and have children. In a 2019 survey by Statistics Korea, only 48.1 of South Koreans saw marriage as a necessity, a decline of 20 percentage points over the prior decade. More recent surveys by Statistics

Korea show that around 30 percent of South Koreans do not believe they need to have children after marriage.

Other factors are also impacting total fertility rates. Mothers are choosing to have children at a later age. The average age of mothers giving birth, for example, has risen from 30.97 years old in 2009, to a preliminary estimate by Statistics Korea of 33.1 in 2020.

Over the last decade, most children were born to women between the ages of 30-34 years, but prior to 2016 the second largest age range was 25-29 years old. Since 2016 there has been a shift. The second largest age group for births is now between the ages of 35-39 years. This is true to an even greater extent for second children, where the shift began in 2012.

While women are choosing to have children at a later age, the continued decline in total births suggests that women are also choosing to have fewer children overall. Total births of first children have fallen from 265,952 in 2001 to 168,477 in 2019, while the total births for second children have fallen from 235,268 to 108,391 over the same period according to Statistics Korea. The Bank of Korea sees the economic uncertainty from the pandemic reinforcing these trends.

This expectation is similar to the experience after more recent economic crises. The IMF found that total fertility rates have declined for the last decade among OECD countries in response to the Global Financial Crisis. Economic uncertainty from the Asian Financial Crisis also seems to have resulted in a permanent decrease in fertility in South Korea. Work by Doo-Sub Kim, Alessandra De Rose, Giuseppe Gabrielli, and Anna Paterno has shown that couples in South Korea with low socioeconomic status and job insecurity were more likely to reduce family sizes than couples with a higher socioeconomic status as result of the crisis.

Other work has also shown the impact of income on childbirth. A 2017 study from the Korea Institute for Health and Social Affairs found that housing prices and size had a negative relationship on childbirth. This finding is similar to work done by Lisa J. Dettling and Melissa S. Kearney that showed that rising housing prices resulted in a reduction in births among renters in the United

States. With housing prices continuing to climb during the pandemic, young couples are less likely to be able to afford a home during a period of rising prices and personal economic uncertainty.

How the Pandemic Has Impacted Demographics in South Korea

While natural population decline took place in 2020, data suggests that COVID-19 was only a small factor in the overall number of births and deaths in South Korea. Last year births were an at-all-time low of 272,400, down 10 percent from 2019. However, the vast majority of children born in 2020 were conceived prior to the pandemic taking hold domestically in mid-February. Although deaths rose 3.4 percent to 305,100, only 942 deaths were from COVID-19.

Deaths directly attributable to COVID-19 are not the only way to measure the pandemic's impact on mortality. Another is to consider the excess deaths relative to the average number of deaths in the five previous years. According to Our World in Data, during the pandemic South Korea has seen a significant spike in deaths among those over the age of 85 and a small increase in deaths among those between the ages of 65-84. In contrast, for those under the age of 65 deaths were lower than expected.

While the pandemic has not had a significant impact on mortality in South Korea, that may not be the case for total fertility.

Provisional data on the birth rates for children conceived during the pandemic also show that increased time at home due to the necessities of social distancing has not resulted in an increase in births. Births in January 2021, the first full month during which children would have been conceived during the pandemic, were down 6.3 percent compared to the prior January and the lowest level of births in January since South Korea began keeping birth statistics in 1981.

The data through May indicates a similar pattern, with births setting a record low for each month. In the first quarter of 2021 overall, births were down 4.3 percent compared to the same period in 2020. Estimates of the total fertility rate, however, did increase

to 0.88 percent as deaths exceeded births for the 18th straight month.

Economic Impact of the Pandemic

While South Korea has handled the pandemic relatively well compared to other countries, the social and economic burden of the pandemic has largely fallen on women.

Women have been on the frontlines of dealing with the pandemic and account for more than 94 percent of paid health care workers, assistant nurses, and registered nurses in South Korea. They are also more likely to see an increase in household work due to the pandemic, according to the Korea Labor Institute.

Women are also more likely to be irregular or part-time workers than men, accounting for 63.5 percent of part-time labor in South Korea, and are the dominant source of labor in many of the industries hardest hit by the pandemic. Part-time jobs represent 20.8 percent of all jobs for women. In contrast, part-time work only represents 8.9 percent of all male employment.

While the South Korean economy added a small number of permanent jobs in 2020, it shed 563,000 temporary positions where women are the dominant source of labor. Many of these positions were in sectors such as restaurants and hotels, recreation, and education that were hit hardest by the need for social distancing. As a result, at the end of 2020 South Korea's unemployment rate stood at 5.7 percent overall, but 6.7 percent for women.

The pandemic is also expected to have worsened South Korea's gender pay gap, already worst among OECD countries at 32.5 percent, as women who were able to retain their employment also faced the prospect of reduced pay.

A shift began in 2021 as the economy began to recover. Employment levels for women passed pre-pandemic levels in June, but the economy faces renewed uncertainty from the spread of the Delta variant of COVID-19. That will create new stresses for women who have just returned to the labor market.

South Korea's efforts to manage the pandemic may have minimized the impacts in the short term, but they could linger in

its demographic future for years to come. Economic uncertainty from the pandemic is already showing signs of women delaying pregnancy, and if the Bank of Korea is correct, many may reduce the total number of children they have during their lifetime rather than just delay pregnancies until economic prospects become more certain.

At the same time, managing the economic aspects of South Korea's demographic decline requires better integrating women into the economy. Prior to the pandemic the IMF estimated that if women's participation rate in the workforce continued to grow at the same rate it had in the prior decade, women's contribution to the overall economy would decline due to overall population decline. At a minimum, the pandemic has slowed the integration of a larger portion of women in the economy at a time when participation rates need to increase.

This would be a double blow for South Korea as it would worsen the long-term population picture while also slowing the integration of one of South Korea's last untapped sources of labor.

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